lower part of the valley south and west of the lands to be irrigated by the Oasis Irrigated Lands company.

At one time in the geological history of the state the Sevier river flowed north into the Great Salt Lake. But the erosion of the river in the high lands of its course first formed a delta, and then the channel changing, the stream was deflected to the south, and now empties into the Sevier lake. It was during this period that the rich soil of the Pahvant valley was deposited, and it is nearly level for miles, the fall being about ten feet to the mile, making an ideal proposition for irrigating. The fertility of lands so deposited never is exhausted, and the cultivation of irrigated lands enriches them automatically, for the reason that the streams that carry the irrigating water carry quantities of silt and other organic matter and this flows into the irrigating channels and ditches and is deposited on the soil every season.

The source of water supply of the Oasis project is the flood waters of the Sevier river and such waters as are not used for irrigation during other parts of the year by canal companies and individuals having water rights acquired prior to the Deseret Irrigation company and the Melville Irrigation company, the grantors of the Oasis Land and Irrigation company.

Impounded in Great Reservoir.

These waters are stored in the Sevier Bridge reservoir situated in Juab and Sanpete counties. This reservoir, the largest in the state, has an area of 2790 acres at present, a drainage area of 3986 square miles, and a capacity of 89,280-acre feet of water according to the figures of the state engineer. The dam is 764 feet in length on top, 336 feet wide on bottom and 66 feet in height. It was constructed under the most favorable conditions, that its absolute safety and permanency might be assured. It is the highest type of construction for dams of that character, and has withstood, without the slightest injuries, the severe tests of the Sevier flood waters since its completion, assuring its usefulness and permanency. The provisions made by the engineers for the discharge tunnel the spillway will permit of the washing out of all the reservoirs on the river above it without in any way impairing the safety and efficiency of the Sevier Bridge dam. The overflow spillway was cut out of the solid rock, six feet deep on one side and twenty feet deep on the other, with a width on the bottom of 120 feet. By reason of the facing wall of the dam overlying the top of the dam this wasteway will carry six feet of water in the 120-foot wide channel. For the purpose of drawing off the water from the reservoir during the irrigation season and to provide for an excess of flood waters, a tunnel seven feet high, thirteen feet wide and 425 feet long has been driven through the solid rock through the center of the dam on a level with the bed of the stream. Near the middle of this tunnel the gates which regulate the flow of water are located, and they are raised and lowered in a gate well by hoisting apparatus. There are three of these steel gates, each being three and a half feet wide and eight feet high, and having a total weight of twelve tons. They are set in concrete and a house covers the gate well, and they are in the charge of a keeper. The water, after being drawn through the discharge tunnel, follows the old channel of the river down to a point near Riverside, in Millard county, where a diverting dam has been constructed, and from this the water is diverted into the canals.

Just below the Sevier Bridge reservoir the company has secured title to eighty acres of land lying along the river, which will be irrigated by a six-inch pressure pipe set in concrete on the level of the steel gates in a gate well and from that point will follow the tunnel and will be carried on to the land at a few feet elevation above the river. This farm will be prepared for cultivation, and will be in charge of the caretaker of the dam, affording him occupation, and the products of this farm will pay all the costs and expenses of the watchman. The locality is particularly favorable for the growing of fruits and vegetables, and there is a market near at hand for all that can be produced on the tract.

Riverside Dam.

This dam is 800 feet long on the crest and has a maximum height of thirty-six feet above the bed of the channel. In connection with the reinforced concrete spillway over the top of the dam, there is a re-inforced concrete tunnel built through the center of the dam at the level of the river bed, having a width of four feet, a height of eight feet and a length of 200 feet.

This will serve to provide for an excess of flood waters and to wash out the sand that is deposited in the reservoir from the river. A concrete gatewell has been provided and steel gates with bronze fittings have been placed in control of the waters. There are also set in this gatewell a three-foot steel pipe and a four-foot steel pipe, through which water will be carried from the dam to be used in generating electric power by means of turbine water wheels. These turbine water wheels will be directly connected with electric generators in a concrete power house constructed on and made a part of the dam and spillway. About 500 electrical horsepower will be generated, and it will be transmitted to Oasis and other points on the property of the company. From this diverting dam water is conducted through a series of steel gates at the head of the diverting canals.

Main Carey Canal.

This being the main diverting canal, has a width of 24 feet on the bottom, with an average depth of six feet of water, and the canal is fitted with four steel gates to control the water, is five miles long, and follows the general direction of the main line of the Salt Lake Route. The main canal is constructed with a grade of about one foot to the mile and has a capacity of 300 cubic feet of water per second. About 15 miles of canals have been constructed 15 miles of canals have been constructed and the work is going forward as rapidly as possible. All the difficult and expensive construction of canals has been completed, and remaining canals and laterals to be constructed are in the valley where the contractors are making as much as a mile a day of new channel, assuring the early completion of the entire irrigating system.

The land under the canal system of the company comprises some 43,000 acres and in addition there are several thousands acres of patented lands which can be acquired by direct purchase from the state of Utah. There is scarcely any variation in the quality of these lands in this valley and whatever variation there may be in the prices of these special tracts will be due to their proximity to railroad transportation.

However, the splendid roads of the district, due to the exceedingly light rain-fall, give the farmer easy and quick access at all seasons of the year to Oasis, the shipping point of the district.

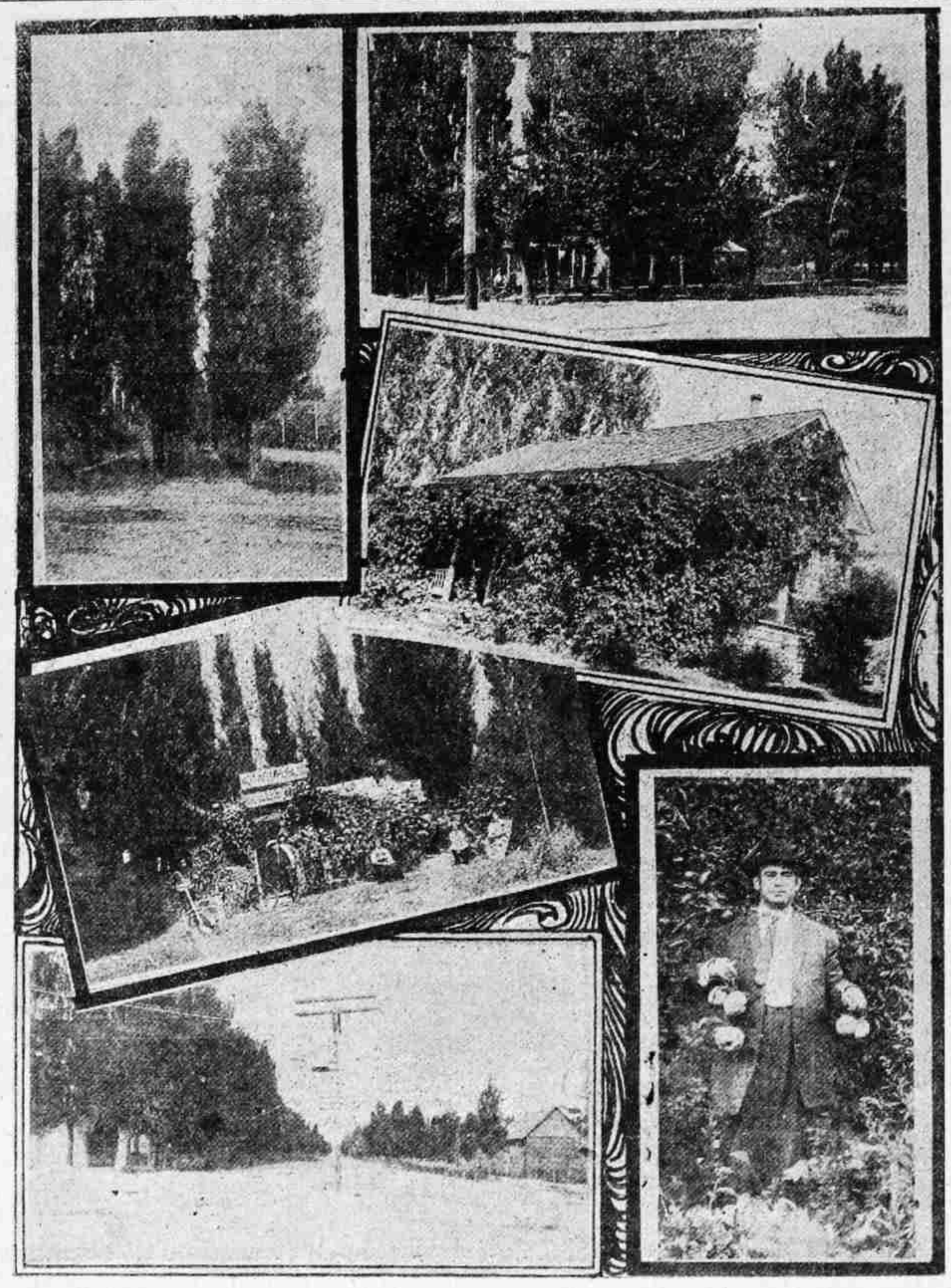
As stated before, the lands of this valley are extremely fertile and their wealth of plant food is inexhaustible, and this is not all. The climate is such that the plants grow rapidly, and there is no bugaboo of summer storms to destroy ripening crops. The valley is rapidly settling up. The Abraham Irrigation company sold more than 10,000 acres in one year, nearly all of which were plowed and put into cultivation as soon as possession was obtained by the purchasers.

The district is also peculiarly favorable to the livestock industries and there are even now large exportations of sheep and cattle from Oasis every year. There is also a great industry being conducted in the breeding of thoroughbred horses, both draft and coach, and many of the horses are sold in the Salt Lake market for fancy prices. The new settler can make a specialty of breeding the best grades of cattle and sheep, and every farm house has its graded Jerseys.

There are also many necessities in other farming districts that can be dispensed with here. For instance, the question of barns. These are not a necessity in the Pahvant valley because of the absence of ill-timed rains and the universally mild winters, and the good fattening qualities of the alfalfa hay the grains, the sugar beets and other products, make it the ideal place for fattening of live stock for the market.

It also possesses the very best soil and climate for the growing of all the fruits of the temperate zone, and apples, peaches, pears, plums and prunes, canteloupes and melons can be grown with flavor and keeping quality scarcely equalled by the fruit of any eastern region, and certainly superior to the California product of the same varieties.

Under the authority conveyed by the legislature on the State Board of Land commissioners to loan money out of the Reservoir Land Grant fund, the board has loaned to the Deseret Irrigation company and the Mellville Irrigation company, the sum of $70,000, and these two companies are the grantors to the Oasis Land and Irrigation company, the latter company having finished the Sevier Bridge reservoir with the money. The loan draws five per cent per annum interest and is secured by the entire Sevier Bridge reservoir, valued at $500,000, with a storage capacity of nearly 90,000 acre feet, and additional security consisting of an undivided four-sevenths (4-7) of the Gunnison reservoir in Millard county.



Scenes on the Price River Project.

Green River Projects

The Green River valley is located 186 miles east of Salt Lake City on the main line of the Denver and Rio Grande railway and is the lowest point on that great system between Salt Lake City and Denver. Its elevation is but 4080 feet above sea level and is 105 miles west of the famous fruit districts of Grand Junction and Palisade of which it is a continuation with some added attractions, being protected on the north and east by the stately Palisade range and on the west by the San Rafael mountains, and in this sheltered neck lies the Green River valley, fifteen miles long and five miles wide and possessing a soil and climate that is not equalled anywhere for the cultivation of peaches and melons, especially the canteloupe. Through this valley flows the Green river, having its source in northern Wyoming, eighty miles east of the western boundary and flowing southward until it joins the Colorado, still in Utah, and, with that stream, was the agency that cut the grand canyon of the Colorado, and finally found its outlet in the ocean waters of the Gulf of California.

In the south end of this little valley that has an irrigable plateau fifteen miles wide, lies the town of Green River, until a year ago a hamlet of 100 population only, until the reclamation of 1000 acres of the most fertile land that lies out doors, with a southern exposure and miles of canals carrying water from the navigable Green river, with a climate more even than in any region of the intermountain country, the demonstration was made that here peaches could be grown of larger size, superior texture and of better flavor than had ever been produced anywhere by irrigation. Green River now has a population of over 1000 intelligent and cultured immigrants from the eastern and middle states, who have purchased small tracts of land and are confident of returns from the planting and cultivating of peach trees of not alone a livelihood, but as well of a competence. In five years this population will have increased very largely, for the assurance of the wealth and resources of the valley have already been proven, and this assurance is an attraction to people of moderate or ample capital for investment.

Green River is a freight division point on the Denver & Rio Grande, and it has greater railway importance confronting it. The railroad system has plans of running a cut-off from the main line at Green River to Salina, in Sanpete county, and this, with the increased acreage that is put into peaches and other fruits every year, will make it an important station. The growth of the fruit industry will of necessity call for the erection of packing plants and icing facilities. The latter is even now in operation and fruit trains are iced at Green River, the industry consuming twenty tons of ice every day through the fruit season. The town is up-to-date now. There are good modern school buildings, fine churches of all denominations, modern and well stocked mercantile houses, newspapers, a Commercial club and an opera house.

Not the least important industry is the cultivation of the canteloupe. This is done in the open spaces between the growing fruit trees and this, the first year that it was attempted, one hundred carloads of these melons were harvested. So great was their fame for superior flavor that they were shipped to the eastern markets, and in New York, Washington and Philadelphia brought a dollar a crate more than the Rocky Ford product in the same markets.

In the middle of the stream of Green river, only three-quarters of a mile from the town, is an island with an area of 220 acres, and heavily wooded. This was secured by purchase by the Island Orchard company, the personnel of the company being the promoters of the Peacharosa and other enterprises at Green River. Of this, 160 acres have been sold to intending orchardists. These lands are now being cleared preparatory to the spring planting of Elberta peaches, and the remaining sixty acres are not for sale, but will be held, cleared and planted by the orchard company with Elberta peaches as an earning project that it is expected will pay big rividends.

In this section of God's footstool there are no extremes of climate. There are 300 days of sunshine in every year, and there are but thirty-five days out of the 365 on which you may expect rain showers. The winters are soft and balmy, spring opens in February and by the end of that month all the garden truck can be planted. In the summer months the days are hot and the nights are warm, and this ideal climate is the acme for the growing of vegetation of all kinds and varieties.

The dry climate is exhilarating and is unsurpassed in the United States. There are few deaths and these few have never been cases of disease, but are the result of old age or accident. It is coughless, non-asthmatical and bronchitis, pneumonia, consumption and tuberculosis are known only by name in this desirable valley. Frosts have never affected the peaches here, and last spring when the crop was nearly a total loss in the fruit regions of Colorado from late frosts, the Green river valley had none of them, and their crops ripened and colored in the warm sun and air and brought the highest prices in the markets of the country.

A Twig of Five Peaches From a Three-year-old Orchard, Green River, Utah.

A Three-year-old Peach Orchard at Peacharosa, in Green River Valley.

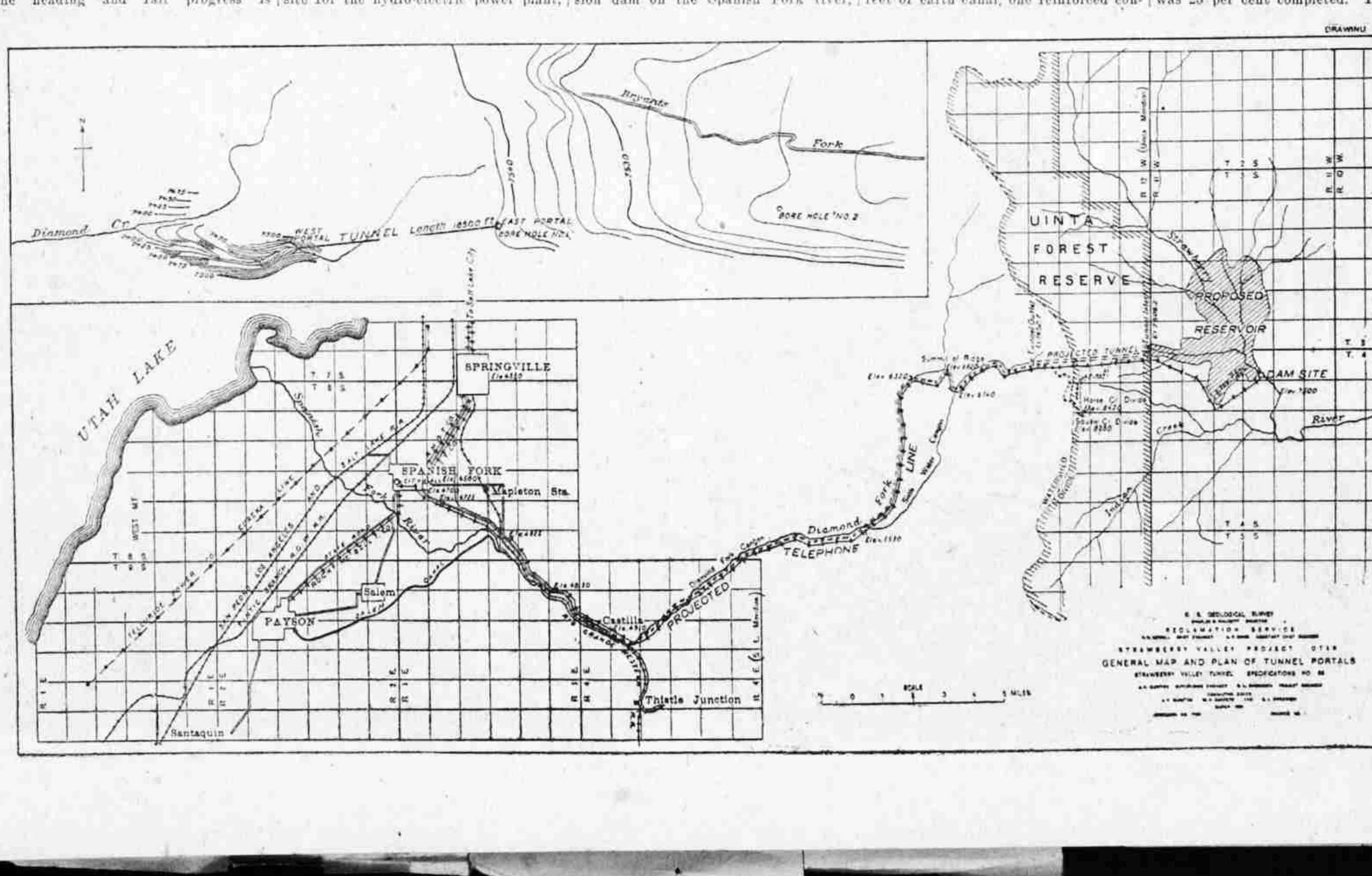
The Strawberry Valley Project — Great Work Which Government Is Constructing in Utah

The Strawberry Valley project contemplates the irrigation of approximately 60,000 acres of mesa and bottom land lying south of Provo in Utah county, Utah. The principal towns on the project are Provo, Spanish Fork, Payson, Salem and Springville. Provo is a city of about 8,000 population and is the county seat of Utah county. The other towns named are prosperous country towns whose population and business will be greatly increased by the building of the project. Two railroads pass through the country which will be reclaimed, thus giving all parts of the project good facilities for shipping out produce.

When completed, the irrigation works will consist of the following features: The Strawberry reservoir, in which it will be possible to impound 110,000 acre feet of water by erecting a dam 45 feet high across Strawberry river; the Strawberry tunnel, 18,500 feet long, with a capacity of 500 second feet, by which the water from the Strawberry reservoir is taken through the rim of the Great Basin; concrete diversion dam and headworks on the Spanish Fork, the dam to be 16 feet high and 70 feet long; power canal 3 miles long, having a capacity of 500 second feet; about 30 miles of main distributing canals, with necessary turnouts and laterals; a hydro-electric power plant that will generate about 3,000 horse-power, and several pumping plants that will be used for pumping water for irrigating purposes. A telephone line 38 miles long, extending from Spanish Fork via Diamond Switch to both portals of the Strawberry tunnel, was commenced December 1st, 1906, and has been completed and telephone connections have been established with all parts of Utah reached by long distance telephone.

A wagon road 32 miles long, extending from Diamond Switch, the United States Reclamation Service shipping point on the Denver and Rio Grande railway, to both portals of the Strawberry tunnel. The maximum grade of this road is seven per cent. with 85 per cent. of the road having a maximum grade of less than five per cent. During the winter and spring the road is impassable for anything except light rigs on account of the mud, thus making it necessary for all the heavy freighting to be done during the summer months.

The work in the tunnel has been carried on from one heading at the west portal. Electric rock drills supplied with power from gasoline engines are being used to do the drilling in the heading and fair progress is being made. The power canal is a little more than three miles in length, and extends from a point on the Spanish Fork to the site for the hydro-electric power plant, located about three miles from the town of Spanish Fork. The capacity of this canal is 500 second feet. The work includes a reinforced concrete diversion dam on the Spanish Fork river, 16 feet high and 70 feet long, two settling basins in the canal for taking out the silt, two tunnels (total length, 1,375 feet), 9,000 feet of lined canal, 5,325 feet of earth canal, one reinforced concrete culvert, and headgate for pressure pipe leading to the power plant. Work was begun on the canal May 1st, 1907, and on June 30th, 1907, the work was 25 per cent completed. The canal is now complete and the machinery is being placed.



The hydro-electric power plant will be used to furnish power for the construction of the Strawberry tunnel, for supplying power for pumping purposes and for furnishing light and power to nearby towns. For the present only sufficient machinery will be installed in the plant to furnish power for the construction of the Strawberry tunnel and for lighting purposes in the town of Spanish Fork, which is only three miles from the power house.

The work has been carried on from the west side only and the driving of the tunnel has been continuous, sometimes with one and other times with two and whenever conditions would permit three shifts of men. Eight hours a day is all that the men are allowed to work unless extreme necessity requires more, such as life and limb at stake. At the present time three miles of the canal has been completed. 1500 feet of soft ground tunnel work in the power canal, 750 feet of adqueduct through gravel. Much of the work is rock work or excavation in rock. Work has been commenced on the main power house and on the substation at the tunnel.

Twenty-six of the contemplated thirty-five miles of the transmission line has been completed. At the present time there is but one shift at work on the Strawberry tunnel, but three shifts will be put on as soon as the machinery is limbered up.

About one-third of the entire work on the project has been completed and of this one-half, at least, has been done during the present year. There is a fine, well built camp at the west end of the tunnel and the men have comfortable quarters. 1500 feet of timbering has been put in the main tunnel but the balance of the work so far done is through solid rock and therefore will not need timber bracing. The whole, however, will be lined throughout with concrete. 100 to 150 men are employed all the time and they are paid $2.25 per day for common laborers and $3.00 to $3.50 for foremen and carpenters.

At Diamond Switch a parcel of land has been leased for use as a receiving and forwarding point for machinery and construction materials. Three large storehouses, a stable that will accomodate twenty-four horses, and several dwelling houses for employes have been erected. The machinery and construction material received at this point are forwarded to both the Strawberry tunnel and power canal.